

HOW I DO IT

Spiral Blade Plate Fixation for Pathologic Subtrochanteric Femur Fractures

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Impending fractures of subtrochanteric metastatic lesions can present numerous challenges for orthopaedists. Frequently these lesions are difficult to stabilize with standard fracture hardware and require additional fixation proximally utilizing the normal bone of the femoral head and neck. Once stabilized, these patients generally require external beam radiation therapy to the operative site, which can interfere with wound healing, making it crucial to minimize the operative incision and dissection to prevent wound complications. For many of these advanced cancer patients, their quality of life is of great importance, and early postoperative ambulation becomes an important goal. Femoral nailing with the Synthes™ intramedullary nail and spiral blade plate offers excellent stabilization for subtrochanteric lesions allowing early ambulation. It can be performed with little morbidity using a percutaneous approach and intraoperative fluoroscopy to guide the placement of four incisions, each requiring two to three staples for closure. Postoperative radiation therapy can be initiated as early as the day following surgery as wound complications are unlikely with this percutaneous approach.

We position the patient in the true lateral position on a bean bag and standard operative table, which is *flexed at the hip*. The C-arm fluoroscopic unit is draped into and curves over the operative field. Under fluoroscopic guidance, a Steinmann pin is aligned for percutaneous placement into the piriformis fossa beginning proximal to the hip joint (Fig 1). Once the alignment of the pin has been verified, it is percutaneously placed into the fossa and its position verified in two planes at 90°. It is then advanced into the canal of the femur. The skin incision can be extended by 2–3 cm to allow introduction of the starting drill and its tissue protector into the fossa for drilling of the cortical bone. An external measuring guide helps verify preoperative measurements for the correct nail length. The unreamed nail is then placed with little difficulty again under fluoroscopic, two-plane guidance.

A second Steinmann pin is placed percutaneously within the femoral head and neck under fluoroscopic guidance. This incision is later extended by 2–3 cm to allow drilling of the lateral cortex. The pin length is

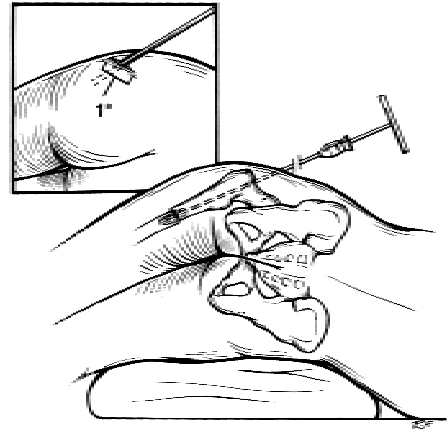


Fig. 1. The patient is positioned laterally on the operative table, which is flexed at the hip to maximize access to the piriformis fossa. The inset shows the percutaneous placement of a Steinman pin used to ream the proximal femur prior to nail insertion. Subsequent insertion of interlocking screws can be performed as clinically indicated.

measured to obtain the correct length spiral blade plate prior to drilling. The spiral blade plate is then inserted and subsequently locked into place with the proximal locking cap. This is inserted through the same proximal nail incision after the external guide is removed. Distal interlocking screws are then placed in a standard fashion through percutaneous incisions.

We feel that this operative technique for the stabilization of pathologic impending fractures in the subtrochanteric region of the femur provides excellent fixation, ease of introduction, early postoperative ambulation, and early radiation therapy if indicated. Complications from poor or slow wound healing are greatly decreased due to the limited nature of the incisions, thereby decreasing overall morbidity and improving the quality of life for these patients in the postoperative period.

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